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EXAMINER

NGUYEN, JOSEPH D

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 02/04/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/873,439

Applicant(s)

ENGLISH ET AL.

Examiner

Joseph D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 7-12, 15-23, 28-35, 39-46, and 50-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Tu et al. (6,381,463).

Regarding claim 1, Tu et al. discloses a wireless network (abstract) comprising:

a) a mobile node (mobile station (MS)) (#16 fig. 1); and

b) a plurality of access points (base stations (BS)) (fig. 1-2) each of which is capable of managing a radio coverage area (fig. 1-2) and also capable of enabling an impulse radio wireless link (channel impulse response) with the mobile node (col. 3 line 40 thru col. 4 line 25).

Regarding claim 2, Tu et al. further discloses the wireless network of claim 1, further comprising: a positioning network capable of determining a position of the mobile node (fig. 1-8, col. 3 lines 15-50) and also capable of informing (communication) at least a first access point (first base station) about the determined position of the mobile node (MS) (col. 2 lines 54-60, and col. 7 lines 1-12), wherein said mobile node interacting

with the first access point can now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point (when the first BS spends time to track the movement of the MS before it decides to hand over the MS to the second BS which means mobile node is interacting with the first access point can now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point) (fig. 6-8, col. 2 lines 54-60, and col. 4 lines 25-63).

Regarding claim 3, Tu et al. further discloses the wireless network of claim 2, wherein said positioning network further includes a net controller (col. 1 lines 31-63) capable of determining the position of said mobile node by the interaction between said mobile node and at least two reference impulse radio units (first and second base station transmit and receive channel impulse response which means two base stations include two impulse radio units) (fig. 2, col. 1 lines 31-63, col. 2 lines 54-60, and col. 3 line 17 thru col. 4 line 63).

Regarding claim 4, Tu et al. further discloses the wireless network of claim 2, wherein said positioning network is also capable of anticipating which access point of the plurality of access points the mobile node is heading towards by tracking the movement of the mobile node (fig. 1, col. 1 line 18 thru col. 2 line 60, and col. 4 lines 31-63).

Regarding claim 7, Tu et al. further discloses the wireless network of claim 1, the processor accesses to determines whether the MS is being serviced by the microcells,

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which means the MS can only log into or accesses the wireless if the MS is located in an approved area (col. 6 line 4 thru col. 7 line 63).

Regarding claim 8, Tu et al. discloses a mobile node (Mobile station (MS)) comprising: an impulse radio unit (when the mobile station (MS) responses with channel impulse response which means the MS is having the impulse radio unit) capable of using impulse radio signals to interact with an access point (base station) (col. 2 line 54 thru col. 4 line 63).

Regarding claim 9, Tu et al. further discloses the mobile node of claim 8, wherein said impulse radio units is further capable of interacting with a position network that determines a position of the impulse radio unit and forwards (transfer) the determined position to a first access point that informs the mobile node when the determined position of the impulse radio unit is within an overlapped area of at least two radio coverage areas of at least two access points (first and second base stations) (abstract, fig. 1, 6-8, col. 2 line 54 thru col. 4 line 63), wherein said informed mobile node having a wireless link with the first access point now has more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point (fig. 6-8, col. 2 lines 54-60, and col. 4 lines 25-63).

Regarding claim 10, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 11, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 12, Tu et al. further discloses the mobile node of claim 8, wherein said wireless link is an impulse radio wireless link (channel impulse response) (col. 3 line 16 thru col. 4 line 63).

Regarding claim 15, Tu et al. discloses a method for improving communications within a wireless network using impulse radio technology (channel impulse response) (col. 3 line 40 thru col. 5 line 4), said method comprising the step of:

- a) using impulse radio signals (channel impulse response) to enable communications between a mobile node (mobile station) and an access point (base station) (abstract, fig. 2, col. 3 line 40 thru col. 4 line 63).

Regarding claim 16, Tu et al. further discloses the method of claim 15, further comprising the steps of:

- a) generating a map including coordinates of a radio coverage area of each access point within the wireless network (when base station keeps track of the MS position over time, and depicts a geographical area having several macrocells, which means it is generating the map to coordinates with each access point within the wireless network) (fig. 1-2, col. 3 line 16 thru col. 5 line 4);

- b) determining a position of the mobile node (mobile station) (fig. 2, 7-8, col. 3 lines 16 thru col. 5 line 4);

- c) informing the mobile node when the determined position of the mobile node is within an overlapped area of the radio coverage areas of at least two access points

(when MS is moving between BS or microcells which means MS is always crossing the overlap coverage radio area) (col. 2 lines 54-60, and col. 7 lines 1-12);

d) enabling the informed mobile node having a wireless link with a first access point (first BS) to now have more lead time to interact with a second access point (second BS) before said mobile node has to handoff communications to the second access point (when the first BS spending time to track the movement of the MS before it decides to hand over the MS to the second BS which means mobile node interacting with the first access point can now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point) (fig. 6-8, col. 2 lines 54-60, and col. 4 lines 25-63).

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 18, Tu et al. further discloses the method of claim 16, wherein said step of determining the position of the mobile node further includes using impulse radio technology to determine the position of the mobile node (col. 3 line 16 thru col. 5 line 4).

Regarding claim 19, Tu et al. further discloses the method of claim 16, wherein said step of determining the position of the mobile node further includes enabling the interaction between the mobile node and at least two reference impulse radio units to determine the position of the mobile node (first and second base station transmit and receive channel impulse response which means two base stations include two impulse

radio units) (fig. 2, col. 1 lines 31-63, col. 2 lines 54-60, and col. 3 line 17 thru col. 4 line 63).

Regarding claim 20, Tu et al. discloses a wireless network (abstract) comprising:

a) a plurality of access points (base stations) each of which is capable of managing a radio coverage area and also capable of enabling a wireless link with a mobile node (mobile station) (abstract, fig. 1-2); and

b) a positioning network capable of determining a position of the mobile node and also capable of informing at least a first access point (first base station) about the determined position of the mobile node (abstract, fig. 1-2, col. 3 line 16 thru col. 5 line 4); and said mobile node interacting with the first access point can now have more lead time to interact with a second access point before said mobile node has handoff communications to the second access point (when the first BS spending time to track the movement of the MS before it decides to hand over the MS to the second BS which means mobile node interacting with the first access point can now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point) (fig. 1-2, and 7-8, col. 3 line 16 thru col. 5 line 4).

Regarding claim 21, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 22, this claim is rejected for the same reason as set forth in claim 4.



Regarding claim 23, this claim is rejected for the same reason as set forth in claim 12.

Regarding claim 28, Tu et al. further discloses the wireless network of claim 20, wherein said mobile node would handoff communications to the second access point after said mobile node moves out of the radio coverage area of the first access point (fig.1, 6-8, col. 1 line 66 thru col. 2 line 60, col. 6 lines 4-67).

Regarding claim 29, Tu et al. further discloses the wireless network of claim 20, wherein said mobile node would handoff communications to the second access point before a signal quality of the wireless link between said mobile node and the first access point degrades below a predetermined threshold (col. 6 lines 52-67).

Regarding claim 30, Tu et al. further discloses the wireless network of claim 20, wherein said first access point can alert (communication with MS) said mobile node before said mobile node travels into an area known to have interference (tall buildings) (fig. 1, 6-8, col. 1 lines 43-56, and col. 6 lines 4-67).

Regarding claim 31, Tu et al. discloses a mobile node (mobile station) (abstract, #16 fig. 1) comprising:

a) an impulse radio unit (when the MS is having the channel impulse response which means the MS comprising an impulse radio unit) capable of interacting with a position network that determines a position of the impulse radio unit (fig. 1-8, col. 2 line 54 thru col. 4 line 30) and forwards the determined position to a first access point that informs the mobile node when the determined position of the impulse radio unit is within

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an overlapped area of at least two radio coverage areas of at least two access points (when MS is moving between BSs or microcells which means MS is always crossing the overlap coverage radio area) (fig. 1-8, col. 2 line 54 thru col. 4 line 30, and col. 7 lines 1-12), wherein said informed mobile node having a wireless link with the first access point now has more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point (when the first BS spending time to track the movement of the MS before it decides to hand over the MS to the second BS which means mobile node interacting with the first access point can now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point) (fig. 2-8, col. 1 lines 31-63, col. 2 lines 54-60, and col. 3 line 17 thru col. 4 line 63).

Regarding claim 32, this claim is rejected for the same reason as set forth in claim 3.

Regarding claim 33, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 34, this claim is rejected for the same reason as set forth in claim 12.

Regarding claim 35, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 39, this claim is rejected for the same reason as set forth in claim 28.

Regarding claim 40, this claim is rejected for the same reason as set forth in claim 29.

Regarding claim 41, this claim is rejected for the same reason as set forth in claim 30.

Regarding claim 42, Tu et al. discloses a method for improving a roaming (handoff) scheme within a wireless network using impulse radio technology (col. 3 line 16 thru col. 4 line 63), said method comprising the steps of:

a) generating a map (when base station keeps track of the MS position over time, and depicts a geographical area having several macrocells, which means it is generating the map to coordinates with each access point within the wireless network) including coordinates of a radio coverage of each access point within the wireless network;

b) determining a position of a mobile node (mobile station) (fig. 2, 7-8, col. 3 lines 16 thru col. 5 line 4);

c) informing (communication) the mobile node when the determined position of the mobile node is within an overlapped area of the radio coverage areas of at least two access points (when MS is moving between BS or microcells which means MS is always crossing the overlap coverage radio area) (fig. 1-2, col. 2 lines 54-60, and col. 7 lines 1-12);

d) enabling the informed mobile node having a wireless link with a first access point to now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point (when the first BS spends time to track the movement of the MS before it decides to hand over the MS to the second BS which means mobile node is interacting with the first access point can now have more lead time to interact with a second access point before said mobile node has to handoff communications to the second access point) (fig. 6-8, col. 2 lines 54-60, and col. 4 lines 25-63).

Regarding claim 43, this claim is rejected for the same reason as set forth in claim 4.

Regarding claim 44, this claim is rejected for the same reason as set forth in claim 18.

Regarding claim 45, this claim is rejected for the same reason as set forth in claim 19.

Regarding claim 46, this claim is rejected for the same reason as set forth in claim 12.

Regarding claim 50, this claim is rejected for the same reason as set forth in claim 28.

Regarding claim 51, this claim is rejected for the same reason as set forth in claim 29.

Regarding claim 52, this claim is rejected for the same reason as set forth in claim 30.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 27, 38, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tu et al. (6,391,463).

Regarding claim 27, Tu et al. further discloses the wireless network of claim 20, wherein said mobile node would handoff communications to the second access point after completion of a data transfer (fig. 6-8, col. 1 line 66 thru col. 2 line 60). However, Tu et al. does not specifically disclose mobile node would handoff communications to the second access point after completion of data transfer. But, It is well known to one skilled in the art that the mobile station always handoff communication to the second access point after completion of data transfer.

Regarding claim 38, this claim is rejected for the same reason as set forth in claim 27.

Regarding claim 49, this claim is rejected for the same reason as set forth in claim 27.

5. Claims 5-6, 13-14, 24-26, 35-37, and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tu et al (6,381,463) in view of Arazi et al. (6,430,395).

Regarding claim 5, Tu et al. further disclose the wireless network of claim 1, the wireless communication (fig. 2, col. 2 line 54-60). However, Tu et al. does not specifically disclose the wireless network is a wireless local area network.

Arazi et al. teaches the wireless network is a wireless local area network (fig. 24, col. 2 lines 35-46, and col. 38 lines 1-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the Tu et al. system with the teaching of Arazi et al. of wireless network is the wireless local area network in order to detect and determine the position of the mobile device with a number of network base stations to control the handoff.

Regarding claim 6, Tu et al. further discloses the wireless network of claim 1, wherein said mobile node is a mobile station. However, Tu et al. does not specifically disclose the mobile node is a laptop computer or a personal digital assistant.

Arazi et al. teaches the mobile node is a laptop computer or a personal digital assistant (fig. 24, col. 38 lines 54-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the Tu et al. system with the teaching of Arazi et al. of mobile node is a laptop computer in order to provide

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customer with variety choice of devices for accessing service provider or remote access server.

Regarding claim 13, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 14, Tu et al. further discloses the wireless network of claim 1, wherein said mobile node is a mobile station. However, Tu et al. does not specifically disclose the mobile node is a personal digital assistant.

Arazi et al. teaches the mobile node is a personal digital assistant (PDA) (fig. 24, col. 38 lines 54-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the Tu et al. system with the teaching of Arazi et al. of mobile node is a PDA in order to provide customer with variety choice of devices for accessing service provider or remote access server.

Regarding claim 24, this claim is rejected for the same reason as set forth in claim 5.

Regarding claim 25, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 26, this claim is rejected for the same reason as set forth in claim 14.

Regarding claim 35, this claim is rejected for the same reason as set forth in claim 5.

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Regarding claim 36, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 37, this claim is rejected for the same reason as set forth in claim 14.

Regarding claim 47, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 48, this claim is rejected for the same reason as set forth in claim 14.

6. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

703 308-9051, (for formal communication intended for entry)

Or:

(703) 305-9509 (for informal or draft communications, please label

"PROPOSED" OR "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA. Sixth floor (Receptionist).



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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D Nguyen whose telephone number is (703) 605-1301. The examiner can normally be reached on 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703) 308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Joseph Nguyen



Jan. 29, 2004



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